ABSTRACT

A system and method for segmenting, distributing and replacing streaming multimedia clips in a network system including at least one origin server connected to a plurality of streaming caches via an interactive distribution network, such as the Internet. The at least one origin server stores a plurality of streaming multimedia clips in an associated memory and segments the clips into a plurality of data segments of exponentially increasing size; the origin server then distributes the plurality of data segments to the plurality of streaming caches where each streaming cache decides whether to store or discard each segment in accordance with a predefined probability. Another aspect of the invention involves replacing stored data segments at each of the plurality of streaming caches as needed. In one embodiment, a hotness rating is computed for each streaming multimedia clip stored in an SC. Clips are replaced as needed based on their hotness rating relative to other clips. In a second embodiment, a potential function is computed for each segment stored in an SC. Segments are replaced as needed based on their potential function value relative to other stored segments.